# Towards successful electronic commerce strategies

Huizingh, Eelko K.R.E.

# Towards successful electronic commerce strategies:

# a hierarchy of three management models

**Dr Eelko K.R.E. Huizingh**

**SOM-theme B Marketing and interactions between firms**

## Abstract

Although only few managers deny the potential of the Internet, many are struggling with the question how their company can best exploit electronic commerce. Managers need tools that guide them in their quest for effective Web applications. In this paper, we present three models that provide structure to this search process. Model development was guided by two requirements: the models should correspond to models managers are familiar with (e.g., process oriented) and the focus of each model should be on delivering superior customer value.

The *Strategic Internet Applications Model* (SIAM) details that Internet applications can focus on current customers, new customers, the distribution channel, or the product. A company may decide to restructure its distribution channel or to add interaction to products or services. The *Customer Interaction Cycle* (CIC) describes the interaction process between a supplier and a customer, and highlights instances where a supplier can provide added value. The third model is the *ADOF model,* an acronym for Accessibility, Design, Offer, and Fulfillment. This model embraces the methaphor of a funnel, built up of four sequential rings. The model postulates that the degree of operational success of a Web site can be managed by optimizing the combination of the four rings in the funnel.

## 1. Introduction

The predictions of the commercial potential of the Internet are high and still growing. Forrester Research (1997) predicts that the total value of goods and services traded between companies over the Internet will reach from $8 billion in 1997 to $327 billion in the year 2002. In early 1999, the total stock market value of the world's largest Internet access provider (AOL) exceeded that of the world's largest car producer (GM), and the value of Web portal site Yahoo! exceeded that of aircraft manufacturer Boeing. The almost exploding Internet stocks even prompted Alan Greenspan of the Federal Reserve to warn for a Internet stock hype. However, there are also less successful anecdotes. Recently Blokker, one of the largest retailers of domestic appliances in the Netherlands, left cyberspace. Associated Press, a UK based publisher, started with People Bank in 1996. The objective of People Bank was to collect the résumés of at least 250,000 people, and at the start it was considered to become a major threat to the advertising market of British newspapers. In April 1997, People Bank died a silent death with no more than 90,000 résumés. And finally, in the US, retailer Saks Fifth Avenue recently closed its Web site that was open since 1996 because of disappointing Web sales (Adfo Direct, 1998). Total Web sales consisted of one suit of 2,000 dollar and some sweets…

These observations are by no means disturbing. The Web was growing exponentially, and no one would expect this growth pace to last much longer. Some even expect a Web shakeout (McDonald, 1997). Within a few years, an overwhelming number of companies have opened their cyber counterparts. Now, the real hype is over and this has affected the Internet business climate. Although each failure has its own specific causes, an important underlying reason is the lack of knowledge of how to successfully manage the Internet as a new management tool. In a growing number of companies Internet champions experience that the time has ended that Web investments were made solely for experimental

purposes[1]. Like any investment, Web investments need some kind of pay-off. This implies that Web sites should have clear objectives, presumably formulated in a measurable form. There is, however, evidence that many Web sites are lacking a clear objective (Berthon et al., 1996). According to McBride (1997), organizations are driven more by their perceptions of the Internet than any cool-headed consideration of its value to the firm when joining the Internet. To guide managers through the Web decision-making processes they need models that enable them to evaluate current Web presence and proposed Web investments.

In this paper, we propose a hierarchy of three models to support Web decision making. Managers can use these models as guidelines in their quest for effective Web applications. To enhance both management understanding and acceptance, the three models will be presented according to the well-known distinction of Anthony (1965) in three levels of management decision-making (strategic, tactical and operational decisions). At the first level the *Strategic Internet Applications Model* (SIAM) details that Internet applications can focus on current customers, new customers, the distribution channel, or the product. It is a strategic choice, for example, to restructure the distribution channel (e.g., desintermediation), or to add interaction to products or services (since the consequences are not limited to marketing and sales, but often require a redesign of other business processes, such as production and logistics). The *Customer Interaction Cycle* (CIC) is the second level in the hierarchy. Based on the strategic choices, the Customer Interaction Cycle assists managers in determining how to increase customer value by means of Web applications. For example, the switch from standardized products to customized products increases the complexity of the buying process. A Web site can provide tools to assist the customer in making purchase decisions. The CIC model describes the interaction process between a supplier and a customer and highlights instances where a supplier can provide added value. The third level of the hierarchy of Web models comprises of the *ADOF model.* ADOF is an acronym for *Accessibility, Design, Offer,* and *Fulfillment*. This models highlights the factors

that determine the operational success of a Web site. Also based on a customer perspective, the model embraces the methaphor of a funnel, built up of four sequential rings. A Web site can have many visitors (or hits), relevant, however, is the number of satisfied and loyal Web customers. Potential loyal Web customers can get lost at each ring (or threshold). The model postulates that the degree of operational success of a Web site can be managed by optimizing the combination of the four rings in the funnel.

This paper is structured as follows. The next section provides an overview of the short history of the Internet and the changing management focus, from amazing technology to improving business processes. The following three sections discuss the three proposed Web models, the Strategic Internet Applications Model (SIAM), the Customer Interaction Cycle (CIC) and the ADOF model (Accessibility, Design, Offer, and Fulfillment). The final section discusses how the proposed models can guide managers in exploiting the potential benefits of electronic commerce.

## 2. Changing Internet focus

The Internet is a new technology and like other new technologies (e.g., the steam machine, and the telephone), its introduction followed a path that can be characterized by the terms hype, business as usual, and business as unusual (see figure 1). In the first phase, the focus was on the new, amazing Internet technology. In the years 1994-1995 the popular (business) press created a real Internet hype. The future would be radically different from the current, let alone the past. The potential of the Internet was explained by its technological capabilities. Managers were told, on radio, television, and newspapers, that the Internet was a global medium, fast and cheap, connecting anyone with anything by means of a multi-media environment in which they could communicate directly with their customers. Shops at the electronic highway were open 24 hours a day,

seven days a week for customers from all over the world, at hardly any expense (e.g., Newsweek 1995, Time 1995).

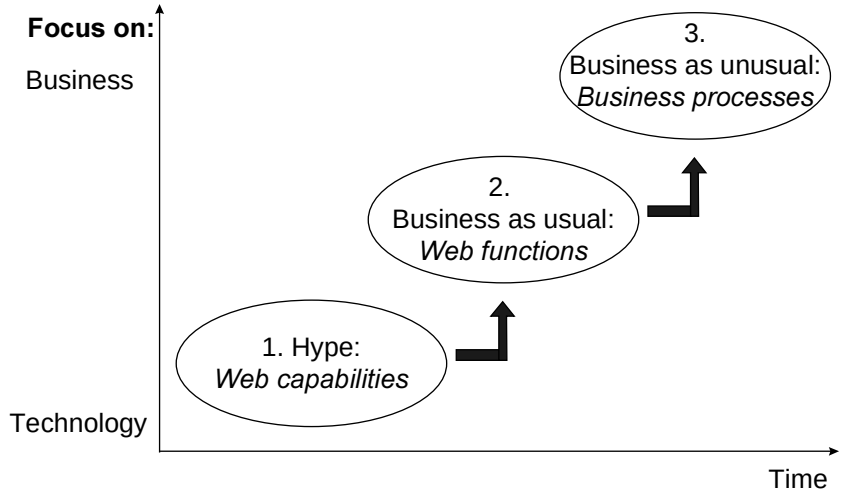


Figure 1 The evolution of Internet models: from a technology push to a business focus.

The second phase is labeled ‘business as usual’. Managers realize that today’s world is not radically different from yesterday’s, however it includes a new tool that enables them to do the same things better, faster, and cheaper. The potential of the Internet is translated into an understanding of which functions or activities in a company could benefit from the Internet. An example of such a ‘business as usual’ model is Angehrn’s (1997) ICDT model. Angehrn argues that the Internet can be used for Information, Communication, Distribution, and Transaction. For managers wondering how to inform their customers, for example, the model explains how to use the Internet by distinguishing between different levels of sophistication and customization. Another model, belonging to the same phase but slightly more business oriented, has been proposed by Cronin (1995). Cronin

categorizes Web applications into three groups, related to marketing, sales and support. Such a classification scheme enables managers to compare their current operations to their possible electronic counterparts. Some Web sites even resembled this model with home pages containing links to the various departments within the company.

In the third phase, companies consider the Internet as a means to an end. Increased customer value is the result of integrating Internet capabilities with business processes. To guide managers into the third phase of 'business as unusual', Internet models should meet two requirements. First, they should be customer oriented. While management thinking has focussed for about a decade on internal improvement (e.g., quality management, restructuring, downsizing, reengineering) it is now being complemented with an outward orientation towards customers (Woodruff, 1997). Companies are searching for opportunities for competitive advantage through superior customer value. The literature on customer orientation signals several shifts, e.g., from transaction marketing to relationship marketing (Grönroos, 1994), from mass marketing to one to one marketing (Peppers and Rogers, 1993), from customer acquisition to customer retention (Reichheld, 1996), and from direct marketing to interactive marketing (recently, the scientific journal *Journal of Direct Marketing* has changed its name into the *Journal of Interactive Marketing*). The second requirement is process orientation, to match recent management theories that often include a process oriented view of organizations. Web models should enable managers to improve business processes by integrating the capabilities of the Internet with other available tools. To strengthen the business focus (compared to the technology focus of the first phases), third phase models explain how to increase customer value, instead of how to use the Internet.

In this paper, we propose a hierarchy of Web management models that meet both requirements (customer orientation and process orientation). All three models take the customer's view as a starting point and are based on the premise that

companies should use the Internet for providing added value to customers. Although they deal with the question how to successfully exploit the Internet, they consider this new technology as no more than a means to an end. This perspective is crucial for building and managing mature and successful electronic commerce applications. Managers need models that detail how to reach business goals by means of information and communication technology (ICT), instead of models that explain the capabilities of ICT.

The models presented in this paper are more or less a by-product of various Internet studies we have been involved in over the past couple of years. Empirical research, literature studies, discussions with managers who were searching for effective Internet applications, and the ever present drive to understand this new phenomenon have gradually led us to development of the hierarchy of Web models. All three models have been discussed extensively with both managers and academics and step-by-step they have evolved towards the hierarchy of Web models that is described in this paper.

## 3. The Strategic Internet Applications Model (SIAM)

At the highest level of the hierarchy of Web models, the Strategic Internet Applications Model (SIAM) explains the possibilities the Internet offers for new strategic directions. The model distinguishes between four strategic choices: to use the Internet for adding interaction to a product or service, to provide added value to current customers, to attract new customers, or to restructure the distribution channel (see figure 2).

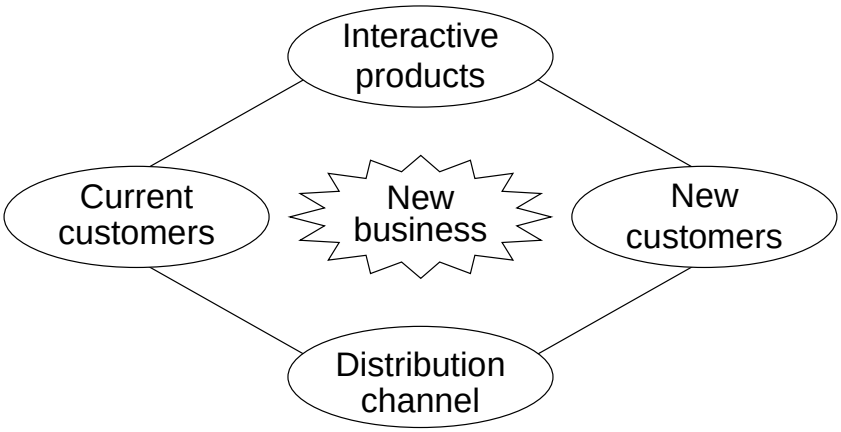


Figure 2 The Strategic Internet Applications Model (SIAM).

### Interactive products

There are many ways to add interaction to a product, depending on its characteristics. The term product is used here in a broad sense, including both the primary product or service, supporting services, and the information communicated to customers about these elements and their use (Woodruff, 1997). Most opportunities to add interaction exist for products that can be digitized. Digital products enable fast and easy non-linear searches in a multi-media environment. In some instances, the added value of digitizing the primary product is so large that it ends the life-cycle of its physical counterpart. For example, the famous Encyclopedia Brittanica, which has been produced since 1768, announced the appearance of its last physical version in 1998. From now on the Encyclopedia Brittanica will only be produced as a digital product. For products that cannot be digitized, mass customization can be the means to add interaction. Companies offer components that customers can combine into ‘tailor-made’ products, well-known examples reach from pizzas to furniture and from clothing to cars. Mass customization increases the customer value of the core product, but simultaneously increases the complexity of the purchase process (Blattberg and Glazer, 1994).

Instead of choosing among a limited number of alternatives, customers are faced with an almost infinite number of different products. To simplify the consumer's decision process, Web applications can guide customers through the selection process by collecting the needs and wants of customers and providing a solution in terms of a product that best matches them.

Interaction can also be added to services. For example, the supermarket at the gas station on route A27 in the Netherlands has increased its attractiveness by putting the assortment on the Internet (www.a27.com). Customers order on the Web and when they arrive at the gas station after working hours, their filled shopping bag is waiting. The same service provided by telephone would disrupt the employees too much, providing it by telefax would be too complex for the customers. A simple Web site matches all requirements. Adding interactivity sometimes lead to a complete turn-around of the process. Take for example recruitment advertisements in newspapers. People looking for a job have to scan a hundred pages or more to find a few interesting advertisements. Web recruitment not only speeds up the search process by enabling database searches, it can also switch the direction of the search process by first collecting résumés and then providing the job searcher with interesting opportunities as they appear (for example, www.monster.com).

### Current customers

Web sites provide ample opportunities to provided added value for current customers. Companies have to continuously increase the value they offer to prevent customers from switching to other suppliers. When markets become saturated and competitive pressures increase, the necessity to provide added value becomes inevitable to retain market share. The model described in the next section, the customer interaction cycle, can serve as a tool to determine instances that include the potential to offer added value to current customers.

## New customers

For two reasons the Internet enables companies to attract new customers. First, the lower costs per contact (e.g., communication, transaction or distribution costs) provide companies the opportunity to focus on previously marginal customers. Second, the Internet is a global medium, providing a different meaning to the marketing instrument 'place'. In the terrestrial world companies often face (visible and invisible) geographical boundaries that limit the size of their markets. Like classical direct marketing media (e.g., direct mail and telemarketing), the Internet serves as an excellent tool to enlarge the geographical size of markets. A successful example is the collective Web site of Austrian farmers (www.lisa.at). These farmers offer 'farmhouse holidays' and their customers used to be Austrians and Germans only (90%). The farmers had neither the budget nor the knowledge to reach potential customers abroad. Since they have collectively built a Web site, over 30% of their customers come from other countries. Another example of a small enterprise that applied the Internet to become a global player is provided by Mr. and Mrs. Brinks from Musselkanaal, the Netherlands. During holidays in Australia they discovered that Dutch immigrants could nowhere buy real Dutch 'drop' (licorice with a sweat or salt flavor). Being a wholesaler in sweets, it was a small step to build a Web site to enable Dutch emigrants from all over the world to order for the famous Dutch 'drop' (www.stadskanaal.org/dutchdrop).

Many managers are highly interested in the capability of the Internet to attract new customers, but less realize that finding new customers often also implies meeting new competitors. More than half of the 22,000 car dealers in the US use the Internet to sell cars (Hughes, 1998). Being primarily regionally (or even locally) oriented as they used to be, the Internet has enabled them to become national players. However, their formerly invisible market boundaries served also as a protection to other car dealers. These boundaries have been leveled to a great extent, which has a significant influence on their competitive environment.

## Distribution

Web sites can change the distribution function in two different ways. First, if a product or service can be digitized, the Internet can serve as a distribution channel. Well-known examples include information (from business news to weather forecasts), software, audio (music), video, graphics, and some kinds of consultancy. Distributing products over the Internet is only a small step when the product had already been distributed on cd-rom or by modem. In many other instances it is a major step, calling for a redesign of the order fulfillment process. The second way the Internet influences the distribution function is when a company decides to restructure its distribution channel. In practice, this often implies desintermediation. Desintermediation leads to lower costs, faster processes, more control on customer interaction and better information. However, at the expense of a possible loss of customers due to disappearing support of intermediaries. Whether or not to desintermediate depends on the question 'who owns the customer?'. Some companies decide that they do (e.g., Apple), while others decide it is the retailer (e.g., Harley-Davidson, Hewlett-Packard). In these latter instances companies build Web sites to support intermediaries, instead of replacing them (see www.harleydavidson.com and www.hp.com). Companies can decide to improve: (i) their service to intermediaries, (ii) the cooperation among intermediaries, or (iii) the service intermediaries provide to the final consumer.

In some cases, electronic commerce offers opportunities for new intermediaries. As electronic commerce comprises of a fusion of ICT and commerce, strong players in the field of ICT can use their ICT knowledge to enter markets that are not related at all to their core business. For example, Carpoint has led Microsoft into the car business (carpoint.msn.com), while Expedia turned the software producer into a successful travel business (expedia.msn.com). With a monthly turnover of over $4 million Expedia has become the world's largest online travel agency. One may consider Expedia as the electronic version of a travel agency, other intermediaries have no terrestrial counterparts. For example, BookFinder is a

search engine that provides information about the availability and pricing of books at different bookstores. It claims to be able to search the collections of almost 10,000 different bookstores (www.bookfinder.com). Other new intermediairies include BargainFinder to find the cheapest CDs (bf.cstar.ac.com), Price Watch for computer products (www.pricewatch.com), and Fido that enables access to a database with over 140,000 consumer products (www.shopfido.com).

The SIAM model distinguishes between four strategic applications of the Internet, with a focus on new customers, current customers, products or distribution. Many combinations of these four different perspectives are possible, with the ultimate combination being a new business (like amazon.com). The next section will concentrate on how a strategic focus can be translated into applications that deliver the added value to (new or current) customers.

**4. The Customer Interaction Cycle (CIC)**

The Customer Interaction Cycle (CIC, see figure 3) is both a customer oriented and a process oriented model. First, we will describe the content of the CIC model, and then briefly discuss
how it can be applied.

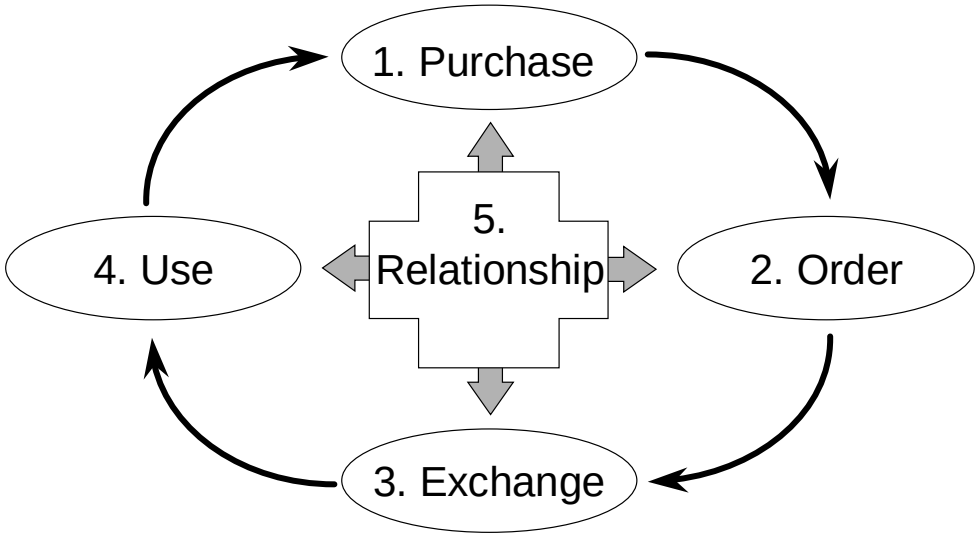


Figure 3: The Customer Interaction Cycle (CIC) to determine how a strategic Web focus can be translated into improved customer value.

### Purchase

Purchasing often starts with making a preliminary selection of products or suppliers and then making the final choice among the alternatives in the evoked set. Usually, the preliminary selection is based upon a limited number of criteria, while the final selection involves more criteria and more detailed information. Knowledge of the customer purchase decision process should drive the design of a Web site. For example, information for the preliminary selection should be somewhere on the surface of the site and not be stored deep down in the Web site. To support primary selection Marshall Industries, an electronic distributor in El Monte California, has included a quick search function on their homepage. Customers can search for parts by manufacturer part number, manufacturer name, or part description. A more sophisticated search function is available deeper in the Web site. This function can complete a search for, for example, hard drives based on eight criteria. If no product in the database matches all criteria, the search function automatically removes one or more parameters used in the selection. If

something was eliminated that the customer must have, the customer can reset the selection to select that parameter first (www.marshall.com).

Customers do not need plain information only, they also have to interpret and manipulate it. For example, a customer may have to assemble a product from components, to compare colors of various items, or to compute sizes, weights, and prizes. To support the purchase decision process Web applications can advice customers (a supplier driven application) or enable them to manipulate information (user driven). Supplier advice can be based on technical considerations, but also on more subjective issues like colors, shapes, style, and taste. Which kind of wine tastes best with a full-flavored pasta? Which brooch fits a burgundy dress? An example of a user driven application is provided by Hans Anders, one of the largest opticians in the Netherlands. Hans Anders incites customers to make a free photo in one of their shops and to fill in a form. The photo is scanned and added to the database that is linked to the Web site. In the Web site customers get access to their photo by entering a password and username. A menu displays several categories of spectacles, each containing a number of spectacles. After clicking on one of them, the spectacle is displayed on the photo of the customer. The customer, wearing his/her current own pair of glasses, can view, compare, print and discuss different spectacles at home (www.hansanders.nl).

### Order

To conclude a transaction it is necessary to determine what will be delivered under what terms. Customers order simple products by clicking on the desired item, and then drag it to a shopping cart, review the shipping and handling conditions and click ‘Submit’. The supplier confirms the order by means of an automatically generated e-mail message. In more complex situations the supplier and customer have to interact several times before all details of the order have been agreed.

Most current applications of electronic commerce gain substantial savings because the customer takes over the order entry process. The customer keys in (or clicks

on) which products to buy, which options, delivery terms, payment method, etc. Before submitting the order, the customer checks it, which also considerably limits the time-consuming process of correcting misunderstandings and typing errors.

### Exchange

In the next phase, the product is exchanged for money. If a product can be digitized, Web delivery is possible. Otherwise, information with regard to the distribution process can be made available within a Web site. Classical examples include the tracking and tracing applications of Federal Express and UPS. By entering a unique code the customer is provided with information on the tracking status of their shipments and details concerning date, time, location, and activity. Similar services are provided by banks (stock ordering information), retailers (for example, www.musicblvd.com) and distributors (for example, www.marshall.com). The order status information can also be used to allow the customer to change an order. Car manufacturers, for example, may allow customers to change the specification of a car even during the manufacturing process: as long as the car has not been painted, the customer can change his/her mind and request for a different color. Payment is the other part of the exchange process. Although many consumers remain hesitated with electronic payments, there are many developments toward safe, direct, and anonymous electronic payments.

### Use

The use phase includes a wide range of activities like installing, training, using, maintaining, and repairing the product. The interaction can be customer initiated, when customers have questions, complaints, or make an appeal to the guarantee, or supplier initiated, when suppliers want to share information related to the use or possession of a product. From a supplier point of view, smart after-sales

interaction must lead to a next purchase cycle by showing substitute products or offering trial products. For example, Music Boulevard offers sound samples of music similar to the music a customer has bought. The information that customers need can be presented both preventively and reactively. In the first case, the Web site contains the information customers are looking for. Examples not only include FAQ (Frequently Asked Questions) pages, but also information (text, pictures, or video) explaining how to install, use, maintain or repair a product, information with regard to new product developments, or cases detailing innovative product uses. By linking the Web site to the order database the company can speed up the information search process considerably. For example, a customer looking for the technical specification of a part of a highly complex product is provided with only those parts that are elements of the products that that customer has bought. Preventive communication can also be supplier initiated, for example a car dealer informing a customer that a yearly overhaul is needed. An example of reactive after-sales interaction is to enable customers to directly ask questions, by means of an e-mail message or a form in a Web site. To speed up the interaction the site can contain a 'call back' button or a chat room. For example, Marshall Industries has included a service called Help@Once, which is a chat service that offers online support, 24 hours a day. A Marshall Technical Support Engineer is available to answer questions and to provide technical assistance.

### Relationship

To increase customer retention many companies have developed activities that are not directly aimed at initiating transactions but that are aimed at strengthening the relationship with the customer. Two possible Web strategies are image building and customizing Web sites. Image building Web applications try to electronically deliver and strengthen the image of brands. A strategy chosen by many producers of fast moving consumer goods is to include a game in their site or to sponsor a game in an entertainment site. For example, the site of Heineken contains a game

called The Quest in which the player, like a real private investigator, has to take the son of an Australian millionaire from Amsterdam back to his home in Sidney. The players are provided with a password that enables them to play the game in parts. The customized Travel Page gives an overview of the current situation, which tracks have been completed, how long this took, the 'financial status', and information about other travelers. Each month Heineken donates a reward to a random selection of the best players. Over 50,000 people have joined The Quest, accounting for 560,000 logins and 360,000 email messages (Wagter, 1998). Other examples to support brand building in a Web site is community building (e.g., by including a chat room in which visitors can publicly or privately communicate with each other on a specific topic), and by providing free services. For example, the Heineken site contains a number of 'bars' (chat rooms) to discuss music or sports and offers visitors the opportunity to send e-cards.

Customized Web sites are parts of Web sites that are protected by password and that contain (confidential) information or applications that enable the customer to do a better job. In this way companies create a kind of *extranet*. Examples include access to special applications (for calculations or on-line ordering), order related information, company related information (e.g., the supplier's strategy, technological developments, or sponsored events), or product related information (e.g., innovative uses, technical specifications, or production schedules). The Web site of Marshall Industries offers customers the opportunity to search for parts by their own internal reference part number. Music Boulevard incites customers to build a personal *My Music Boulevard* home page. Customers are asked for their favorite artists, and to specify the updates and other information they would to receive by email. The My Music Boulevard page offers customized information on recent releases, in-store specials, frequent buyer deals, new artists and bands, news and gossip, reminders of online concerts and chats.

The CIC model is a tool to discover Web applications that can lead to superior

customer value. In each phase of the customer interaction cycle managers need to answer the following questions:

1. *Current support activities.* How do we support customers in their selection process, their buying process, or their product use process?
2. *Evaluation of these activities, from both a supplier and a customer point of view.* Are there any services with which important customers are unsatisfied or that lead to high costs? The answers will determine the priorities of various possible Web applications.
3. *Possible replacement by Web applications.* Which of these customer support activities can be performed also or even better in a Web site? The answers uncover opportunities to use the Web as an additional medium or as the more appropriate medium (cheaper, faster, better, or by providing new customer value). A simple method for finding appropriate Web applications is to screen customer support activities for instances in which the operator is no more than a human interface between the customer and an internal system.
4. *Unfulfilled needs and wants and Web capabilities*. What currently unfulfilled needs and wants can be identified and what possibilities offers the Web to meet them? The needs and wants should be analyzed from both a customer and a supplier perspective. Customers may want better information on the performance of various product alternatives, while a supplier may want to better inform customers about the wide range of available product components and the ways they can be combined. For each identified need and want, management must determine whether the Internet can serve as a means to provide it in a cost effective way.

## 5. The ADOF-model

The third model in the hierarchy describes the factors that determine the operational success of a Web site. This model is called the ADOF-model, where

ADOF is an acronym for Accessibility, Design, Offer, and Fulfillment. A good metaphor for the ADOF model is a funnel (see figure 4). The ADOF funnel is made up by a sequence of rings. At each ring a company can lose potential customers

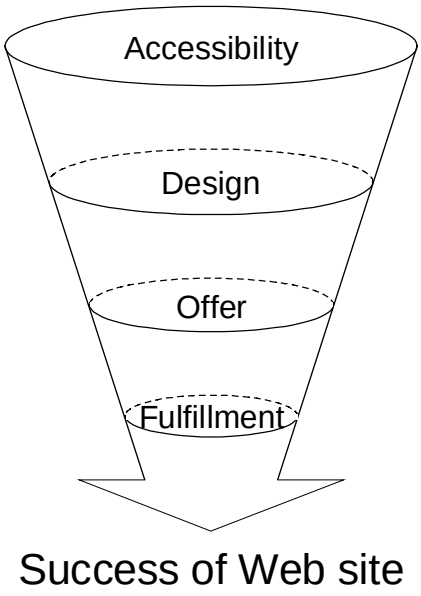


Figure 4 The ADOF model: the success of a Web site determined by a process that is portrayed as a funnel consisting of four sequential rings.

### Accessibility

The fundamental difference between Web sites and classical media is its non-intrusiveness. The customer is visiting the supplier instead of the other way around. That is why accessibility is crucial. Accessibility refers to the extent to which (potential) customers can easily find the Web site. One can build a great Web site, but if no one can find it, the site cannot be successful. The Web site

becomes easier to find if it has an URL-address that is obvious (www.company.com or www.brand.com). The importance of an easy and intuitively to remember addresses is exemplified by the success of 1-800-FLOWERS. There are many ways to support accessibility, e.g., by placing banners and links on affinity sites, or by adding the site to search engines, directories, and What's Cool lists. Developers even try to code the site in such a way that it rises to the top of the list of search results (Briones, 1999). In general, links should be available at any place in cyberspace that is visited frequently by potential customers. The on-line promotion efforts can be supported by off-line activities ranging from advertisements in broadcasting and print media, to including the URL on product packages and business cards. For example, the magazine Datamation displays its URL address at the bottom of each page.

### Design

The content of a Web site should be organized and presented in such a way that visitors can easily find what they are looking for. This sometimes contrasts with the use of sophisticated tools. For example, Drèze and Zufryden (1997) found that the use of Java scripts was negatively related with both the number of pages requested and the time spent on a site. Due to its multi-media nature, the transfer of content is a much more complex process compared to traditional media. The visitor of a site can be a reader, a watcher, a listener and a driver simultaneously. The design of a site should therefore address the visitor in all of these roles.

Although Web communication is highly unpersonal, many sites try to engage the visitor into a dialogue. One way to add personality to the site is to include a special creature that serves as a vehicle for the communication between the unpersonal Web database and the visitor (Sayers, 1998). A well-known example is Ragú's Mama Cucina (www.eat.com). Instead of Ragú marketers communicating with their customers, the methaphor is used of a friendly, old Italian lady. Coupons, for example, are not presented as such, but Mama Cucina is cited saying: "Those nice

kids at Ragú have got a brand new batch of coupons for you with lots of savings". The site contains links such as 'Talk to Mama', 'Mama's cookbook', and 'Sign up for Mama's Newsletter'. Another example of such a communication vehicle is Swoop, a personal job search agent described as 'a tireless monster that will zero in on perfect job matches' at www.monster.com. Often, the creature is not just a communication vehicle, it also adds fun and provides cohesion between the various information elements. For example, Ragú presents different information in different rooms of Mama Cucina's home (e.g., a family room, a kitchen, and a dining room).

Web sites should inform and entertain, but both goals should not be treated as separate functions. Web sites should entertain while they inform, implying that navigation and information must be presented in an attractive way. Web developers have to learn how to mix both ingredients. A good example is the Web site of the Hans Brinker low budget hotel in Amsterdam, the Netherlands (www.hans-brinker.com). Like any hotel site, it contains information on rooms and prices, and a fill-in form to book rooms. One page offers the possibility to admire the window view. After clicking on this icon, a large blind wall appears. Not an unusual view from a low budget hotel…

Another important aspect of Web design is interactiveness. Web visitors are not passive TV watchers, they expect to play an active part in the communication process. Users should be able to drive the flow of information, implying a design that permits multiple ways of navigation (e.g., links within a network structure, a search function, and a map) and that strengthens the sense of control on the side of the user (in contrast to designs that create the feeling of being 'lost in cyberspace'). Companies can explicitly ask for feedback, by means of requests for comments, invitations to participate in new product developments, and questionnaires. Another way to increase interactiveness is to include games. Games enlarge the degree of interactiveness, keep visitors for a longer period of time in the site, influence the chance of return-visits and may attract new visitors

by word-of-mouth advertising. However, if there is no link between the game and the company's offer or image, one may question the value of their effects.

### Offer

The third ring deals with the offer that is presented in the site. In cyberspace, the quality of the offer is determined similarly to that in the terrestrial world, where the ratio of price and quality determines the attractiveness of an offer. Web sites can influence both elements. Quality refers to the perceived value of the product in a broad sense, including supporting services and information (see section 3). Quality can be increased by means of easier access to information, increased availability (7x24), home or office access, and tools to speed up the purchase process. These tools can be search engines (to find an appropriate alternative in a database), comparison facilities (travel sites rank flights based on lowest fares, total flight time, and number of transfers), or the ability to personalize the search process (for example, Marshall Industries that offers customers the opportunity to search for parts by their own internal reference part number). Also, the promise of quick fulfillment (online brokers) and instant information about order status (e.g., Federal Express and UPS) increase the perceived quality.

The other factor that determines the attractiveness of an offer is price. Prices on the Web can be lower because the customer takes over the data entry process. The customer keys in which products and quantities are required, thereby releasing the supplier of the time-consuming processes of data entry and the correction of data entry errors. Also, desintermediation can lead to lower prices. For example, Hyatt hotels offer a 10% discount for each on-line booking. Hyatt can offer this discount because it avoids the 20% commission for traditional bookings at travel agencies (Olislagers, 1996).

### Fulfillment

In essence, fulfillment is the extent to which a company is able to meet (1) its own promises with regard to the product in a broad sense, and (2) the service standards in cyberspace. If a company offers delivery within 24 hours, is it able to meet that promise? Do the products have the features described in the site?, etc. In this sense, fulfillment issues in cyberspace are similar to those in direct marketing (e.g., Roberts and Berger, 1989). The quality of fulfillment is determined to a large extent by the quality of the organization behind the Web site. Web sites can support the fulfillment process by providing access to information about the status of production, delivery and payment, and the ways to install, learn and use products. Besides the often cited examples of carriers, a creative way of using the Web to provide status information can be found in the site of Interheem, a real estate developer in the Netherlands (www.interheem.nl). Interheem has placed two Web cameras at a construction site in Utrecht to enable their customers to monitor the progress of the building of their houses.

The second part of fulfillment deals with the standards in cyberspace. Service standards in cyberspace refer to, for example, the time within which incoming e-mail messages have to be answered. Forty-eight hours is often used as a service standard that companies should be able to meet.

## 6. Conclusion

Although only few managers deny the potential of the Internet, many are struggling with the question how their company can best exploit electronic commerce. According to McBride (1997), in many organizations the adoption of the Internet is reactive rather than proactive. Many companies follow a ‘goldrush’ model, not supported by a clear strategy (Anghern, 1997). A Web site does not lead to more customer contacts by definition. And more customer contacts do not necessarily lead to competitive advantage. ‘Content is King’ stress some Web

observers (e.g., Snyder 1996, Chase 1996), and shattered expectations are supposed to do more harm than providing no access at al (McKenna, 1995). But when is the content 'right'? Managers need tools that guide them in their quest for effective Web applications. In this paper, we have presented three models that provide structure to this search process, namely the SIAM, the CIC and the ADOF model. Model development was guided by two important requirements: the models should correspond to models managers are familiar with (e.g., process oriented) and the focus of each model should be on delivering superior customer value. Taking a receiver orientation instead of a sender orientation implies that the question 'what can we put on the Internet' is replaced with the question 'what do our customers need from us?'. The Internet is considered as a means to an end, and the hierarchy of Web models help managers to identify applications derived from marketing objectives, and not from the technical capabilities of the medium. For example, the Internet offers the opportunity for easy, fast and cheap communication, and therefore companies tend to derive 'improved communication with our customers' as their Web objective. The CIC model stresses that that is a relevant objective only if it is necessary from a marketing perspective to improve the communication with customers.

Another implication of considering the Internet as a tool to provide superior customer value is that this enables the integration of the Internet with other media, like television, radio, print media, direct mail and telephone (telemarketing). For example, for a new product, the mass media can be used to create awareness, and a Web site to provide more detailed and extensive information (e.g., text and graphics or a video showing the product in action) and to offer the opportunity to request samples. By providing samples in return for an address (be it e-mail, post mail or a telephone number) a company creates the opportunity to ask customers for feedback, to start a relationship and to fine tune new product developments.

The objective of the hierarchy of Web models is to provide structure to the

brainstorming processes in which managers try to identify effective Web applications. The models intend to highlight potential opportunities. Their intention is not to have managers choose for one particular direction. For example, the SIAM model details that managers can use the Internet to acquire new customers or to provide interaction to existing products or services. The choice between both directions is not exclusive. Both represent categories of opportunities that lead the manager's thinking process towards different avenues of possible applications. Both avenues may cross each other, for example when revised products seem especially attractive for those who have not become customers yet.

The labels assigned to the three levels in the hierarchy of Web models (strategic, tactical, and operational) refer to sequential levels of analysis. The SIAM model highlights fundamental issues, while the CIC model provides a customer oriented framework to discuss these issues in greater detail. The ADOF model assumes that a Web site with a known objective is available and deals with the question how to make this site more effective. The three labels do not refer to the well-known planning horizons. In cyberspace, planning cycles tend to be much shorter than they are in the terrestrial world. The best way to find out whether an attractive idea is a feasible business option is to implement it rapidly, evaluate its performance, and then to improve or reject it.

The crux of electronic commerce is to effectively match the efforts to create superior customer value with the technical capabilities of the new medium. Compared to traditional media, electronic media are superior in (at least) three ways: database searches, complex computations, and several aspects of communication (e.g., speed, accuracy, multi-media, and cost). Effective Web sites use these basic capabilities to create innovative applications that provide added value for customers. Now the Internet hype is over, managers can and should attain a more critical attitude towards proposed Web investments. A (more) mature

technology calls for more mature applications. Some studies have shown that it is important to be one of the first among competitors to enter cyberspace (Huizingh, 1997). A much broader study, focusing on the history of fifty consumer product categories for many decades, stress the importance of being an 'early leader' (Golder and Tellis 1993, Tellis and Golder, 1996). Early leaders are firms that enter after pioneers, but assume market leadership during the early growth period of the product life cycle. In most markets, the early Internet leader has still to be determined, and the models proposed in this paper help managers to understand how to attain such a position. These models support the phase of strategy formulating only. When it comes to strategy implementation, aligning the internal organization with Web objectives becomes crucial. But structure follows strategy, and knowing where to go precedes determining how to go.

**References**

Adfo Direct (1998), *Internet-flop*, no. 5, May, 3. (Internet failure)

Angehrn, Albert (1997), Designing Mature Internet Business Strategies: The ICDT Model, *European Management Journal*, Vol. 15, 4, 361-369.

Anthony, R.N. (1965), *Planning and Control Systems: A Framework for Analysis,* Harvard University Graduate School of Business Administration, Boston, Mass.

Berthon, Pierre, Leyland F. Pitt, Richard T. Watson (1996), The World Wide Web As An Advertising Medium, *Journal of Advertising Research*, January/February, 43-54.

Blattberg, Robert C. and Rashi Glazer (1994), Marketing in the Information Revolution, in: R.C. Blattberg, R. Glazer en J.D.C. Little (eds), *The Marketing Information Revolution*, Harvard Business School Press, 9-29.

Briones, Maricris G. (1999), Found on the Information Superhighway, *Marketing*

*News*, June 21: 1, 7.

Chase, Larry (1996), *MNE Marketing in the World Wide Web of Chaos*, http://chaseonline.com/marketing/golden.html.

Cronin, Mary J. (1995), *Doing more business on the Internet*, Van Nostrand Reinhold, New York, NY.

Drèze, X. and F. Zufryden (1997), Testing Web site design and promotional content, *Journal of Advertising Research*, March/April, 77-91.

Forrester Research (1997), *Sizing Intercompany Commerce*, Business Trade & Technology Strategies, July, (Forrester Report, www.forrester.com).

Golden, Peter N., and Gerard J. Tellis (1993), Pioneer Advantage: Marketing Logic or Marketing Legend, *Journal of Marketing Research*, 30, 158-170.

Grönroos, Ch. (1994), From Marketing Mix to Relationship Marketing: Towards a Paradigm Shift in Marketing, *Management Decision*, 32 (2), 4-20.

Hughes, John (1998), Auto dealers see future in the Internet, *Marketing News*, March 2, 13.

Huizingh, Eelko K.R.E. (1997), Correlates with Success of Commercial World Wide Web sites: An Exploratory Study, *Proceedings 26th EMAC Conference,* Warwick (UK), 20-23 May, p. 1779-1785.

McBride, Neil (1997), Business Use of the Internet: Strategic Decision or Another Bandwagon?, *European Management Journal*, vol. 15, no. 1, 58-67.

McDonald, Scott C. (1997), The Once and Future Web: Scenarios for Advertisers, *Journal of Advertising Research*, March/April, 21-28.

McKenna, Regis (1995), Real-Time Marketing, *Harvard Business Review*, 73 (4), 87-98.

Newsweek (1995), *Special Report: TechoMania*, February 27, 24-76.

Olislagers, M. (1996), Interactieve media, *MEC Marketeer*, March, 6-9.

Peppers, D. and M. Rogers (1993*), The One to One Future; Building Relationships One Customer at a Time*, New York, NY: Doubleday.

Reichheld, F.F. (1996), *The Loyalty Effect; The Hidden Force Behind Growth,*

*Profits and Lasting Value*, Boston: Harvard Business School Press.

Roberts, M.L. and P.D. Berger (1989), *Direct Marketing Management*, Prentice-Hall, Inc., Englewood Cliffs, NJ

Sayers, Charles (1998), *Personality*, (http://www.searchz.com/wmo/personality.shtml).

Snyder, Joel (1996), Good, bad, and ugly pages, *Internet World*, April, 28-29.

Tellis, Gerard J., and Peter N. Golden (1996), First to Market, First to Fail? Real Causes of Enduring Market Leadership, *Sloan Management Review*, Winter, 65-75.

Wagter, Rik (1998), Gamercials: het spel draait om de clickers, *Adfo Web*, August, 12-13 (Gamercials: it is all about clicking).

Woodruff, Robert B. (1997), Customer Value: The Next Source of Competitive Advantage, *Journal of the Academy of Marketing Science*, vol. 25, no. 2, 139-153.

Time (1995), *Special Issue: Welcome to Cyberspace*, 145 (Spring).

[1] Although the Web is technically a separate Internet application (like e-mail, ftp, and news groups), in practice, the Web has become the standard user interface for all Internet applications. For example, Web browsers provide access to e-mail and news groups. Therefore we will use the terms 'Web' and 'Internet' interchangeable in this paper.